



## Product Alert 33

<b>Product</b>	All current versions of StorNext® Storage Manager, which includes: <ul style="list-style-type: none"><li>• 3.5.0 and 3.5.1</li><li>• 3.1.0 through 3.1.4</li><li>• Any releases prior to 3.1.0</li></ul>
<b>Summary</b>	A store policy is continuously started, causing the Linter database to use 75 - 80% of the available CPU cycles.
<b>Date</b>	December 2009

### Overview

This behavior occurs when the following two conditions exist:

- 1 The store mintime of the policy class is very large, so no files are stored; thus allowing condition #2 to be met.
- 2 The number of store candidates exceeds the minimum value for starting a store policy. This number is defined by the TSM system parameter `STR_MAX_NOT_STORED`, which defaults to 100.

This results in a high CPU utilization by both the Linter kernel and the `fs_store` process. Also, the store policy is logging to the TSM tac logs that no files are being stored. Thus the size of these tac logs will increase in size much quicker because the store policy is running many times per second.

Once the files age enough to exceed the store mintime value set in the policy class, this loop will terminate and resource utilization will drop to normal values.

For more information, contact the Quantum Technical Assistance Center and reference CR 28206.

### Cause

When the two conditions described previously exist, the `fs_store` process spawns a store policy for this policy class but no files are stored. Because the same conditions still exist after each store policy, the `fs_store` process can continue to spawn another store policy for the class almost immediately if the

number of other classes that need work is small. This can occur 2 - 6 times per second depending upon the other activity on the MDC.

This activity does not lock up the MDC, but it does result in a performance degradation. That is, all file systems remain up and running, retrieves to/from tape work normally, commands are processed, and so on.

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## Symptoms

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Running a `top` command will show a high CPU utilization by the Linter kernel, typically in the 70-80% range, with the `fs_store` process next at about 5%. In some cases the Linter CPU utilization has been reported to be greater than 90%.

Also, the TSM tac log will start filling up quicker with messages similar to the following example.

In this example the policy class name was "longtime" where the store mintime was set to 35 million minutes. Note there are a total of 5 messages per run.

```
Nov 19 11:22:50 cirque sntsm fs_store[17411]:  
E1202(9)<00000>:mdalstr1978: Starting store policy for classndx: 3  
  
Nov 19 11:22:51 cirque sntsm fspolicy[18214]:  
E1202(9)<1932310882>:StorePolicy1918: Store list empty for:  
longtime  
  
Nov 19 11:22:51 cirque sntsm fspolicy[18214]:  
E1202(9)<1932310882>:StorePolicy1928: Scanned 200 files looking  
for candidates for storage.  
  
Nov 19 11:22:51 cirque sntsm fspolicy[18214]:  
E1202(9)<1932310882>:StorePolicy2023: Store complete for: longtime  
  
Nov 19 11:22:51 cirque sntsm fs_store[17411]:  
E1202(9)<00000>:mdalstr2164: Detected death of process 18214
```

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## Recommendations

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If you observe this behavior, try these steps to resolve this issue:

- 1 Change the store mintime of the policy class to a lower value so the files don't have to age so much until they are stored.
- 2 Manually run `fsstore` commands to store files sooner than their age threshold defined by the store mintime.
- 3 Set the `STR_MAX_NOT_STORED` system parameter to a larger value than the number of store candidates. For example, if the number of store candidates displayed by the `showc` command is 347, then add the following line to the `/usr/adic/TSM/config/fs_sysparm_override` file:

```
STR_MAX_NOT_STORED=500;
```

TSM must be stopped and restarted for this change to take affect. This really helps only if the rate of new store candidates for this policy class is very, very low. Otherwise, you have just delayed the problem for only a short period of time.

If none of the above resolves the issue, please contact Quantum Support for assistance.

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## Contacting Quantum

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More information about StorNext is available on the Quantum Service and Support website at [www.quantum.com/ServiceandSupport](http://www.quantum.com/ServiceandSupport). The Quantum Service and Support website contains a collection of information, including answers to frequently asked questions (FAQs). You can also access software, firmware, and drivers through this site.

For further assistance, contact the Quantum Technical Assistance Center:

<b>North America</b>	+1 800-284-5101 Option 5
<b>EMEA</b>	00800 9999 3822
<b>Online Service and Support</b>	<a href="http://www.quantum.com/OSR">www.quantum.com/OSR</a>
<b>World Wide Web</b>	<a href="http://www.quantum.com/ServiceandSupport">www.quantum.com/ServiceandSupport</a>

(Local numbers for specific countries are listed on the Quantum Service and Support Website.)